

## Service Brake Adjustment Method

By Peter Crosby

The Model A mechanical service brakes are a design that will match the hydraulic type systems in stopping performance if, restored and adjusted correctly. Mechanical brakes work with rods, levers, and wedges to force the shoes to rub against the drums and stop the wheels from revolving. When you adjust the brakes you are setting limits on the travel of the rods, levers and, the distance between the shoes and the drums. The trick is to get the shoes to contact the drums solidly, before they move beyond effective limit of their travel. Full accurate adjustment is necessary to compensate for normal expansion of the drum due to heat caused by friction. Adjustments that are made too close would let the shoes continually drag on the drums causing rapid lining wear and poor gasoline mileage.

Model A brake adjustment will work best by adhering to Ford's original specifications and methods. Adjustment specifications for service brakes, are found in the January 1928 Ford Service Bulletins; page 202. A tool wedged between the seat and brake pedal is necessary to hold the pedal at a precise position. This is to prove that the wheels can and will lock at the proper time before you leave the garage. Do not assume that having a friend hold the pedal down at some arbitrary position will be good enough. Nobody can hold a brake pedal in exactly the same place with constant pressure every time. Only by using a brake pedal holding tool can one be assured of the best possible adjustment.

To make a brake adjusting tool simply measure the distance from the bottom of the seat cushion frame to the bottom edge of the pad portion on the brake pedal. Add 3 inches to this measurement. Cut a piece of  $\frac{3}{4}$  X 2 inch hard wood to the

length you figured. For example: my Slant Windshield Fordor used a piece  $21 \frac{3}{4}$  inches long.

Carry the stick of wood you just cut out over to your car. Hold it against the seat or cushion frame to the bottom of the pad portion of the brake pedal (keeping it as straight as you can). With a pencil, mark the edge of the wood at the point where it meets the face of the pedal. Take the stick back to your work bench. Measure and make three marks at 1 inch,  $1 \frac{1}{2}$ , and 2 inches from that point in the short direction. Make a saw cut into the wood  $\frac{1}{2}$  inch deep at the 1 inch mark (leaving the line on the longer end);  $1 \frac{1}{2}$  inch deep at the  $1 \frac{1}{2}$  mark, and  $1 \frac{1}{2}$  inches deep at the 2 inch mark. From the end of the stick cut into the wood to meet the bottom of each saw kerf. The cuts should leave you with a stepped arrangement on the end. These steps or notches will hold the brake pedal down at the levels advocated by Ford. To check how the brake will hold at each wheel, use the following method:

- 1- Jack up all four wheels and place jack stands under the axles (not the frame). Place the gear shift in neutral and release the parking brake fully.

- 2- Turn adjusting wedges at each backing plate clockwise until the brake drags, then back off two or three notches or just enough to allow the wheels to revolve without any drag. Note: some judgment must be used to allow for any high spots on newly lined shoes which wear quickly. Remember to always spin the wheels for test purposes in the forward direction. Never should your brakes be adjusted hot.

- 3- Wedge the brake stick between the seat cushion frame and the bottom of the brake pedal pad. Set it at the 1 inch notch. Note: always make sure the stick is placed in a straight perpendicular relationship to the seat and the pedal for each and every test. Make sure the front seat is in the same position for every test.

4- Rear brakes should just start to hold when brake pedal is depressed at the one inch notch. Front wheels should spin freely with no change.

5- Depressing the pedal at the 1 ½ inch notch should tighten but not lock the rear brakes and cause the fronts to just start to hold.

6- Depressing the pedal at the 2 inch notch should lock the rear wheels and hold the fronts with a tight drag. If your system does not work exactly to the above specifications, it may be necessary to adjust your brake rods. Brake rod adjustment is handled at the rod clevises. Continue to step 7.

Please take note: *No amount of adjustment will provide good stopping brakes from a worn out or, incorrectly assembled service brakes. If you find any of the following problems as you are working around your car they indicate your service brakes will need more attention than just adjustment.*

Steel pins fit sloppy through rods, levers, and clevises.

Front levers are not leaning forward of vertical.

Brake adjusting wedges do not “click” as they are turned.

Loose wheel bearings and king pins.

Loose rear axle nuts and worn axle keys.

Brake pedal wobbles or does not return all the way up by itself.

Gear oil leaks at the rear backing plates.

Bent or welded brake rods.

Squealing or grinding sounds.

7- Unlock the jam nut and remove the cotter key and clevis pin. When a wheel locks before it is supposed to, turn the clevis as to lengthen the appropriate rod. Shorten the rod if the brake does not hold like it should. Sometimes just a half turn of the clevis is enough to make a difference especially when you are trying to equalize opposite wheels on the same axle (this is important). For every test,

temporarily pin each rod clevis back onto its lever. Have a friend help; one person under the car adjusting rods and the other person to set the brake stick and, spin the wheels. Remove the stick for every rod adjustment.

8- When you are satisfied with your brake rod settings do not forget to tighten the jam nuts and replace the cotter keys. Make sure you have proper pressure in each tire.

9- Test drive the car. At 20 - 25 MPH when the brake is applied and looked with full pressure, the rear wheels should skid evenly without pulling to the left or right. The fronts should not leave much if any skid marks.

10- If the car does not stop in straight line, turn the brake wedge adjustment on the backing plate no more than 1 click in or out; depending if you want to tighten or loosen the stopping action for the wheel in question. If you now find that the brake shoes drag on the drum; readjustment of the rod may be necessary. If the shoe drag problem does not seem to clear up, you may have a warped drum. Turning or replacement will be necessary to fix the problem.

11- On a routine basis use the brake stick method to check your brakes for maximum efficiency. Jack up the car (one axle at a time is OK) and test at the 2 inch notch. The rear wheels should again be locked and a heavy drag on the fronts. Turn the brake wedges for all adjustments at this time. On newly relined brakes, high spots wear down quickly. They will require a more frequent follow up of adjustments until the shoes linings conform to their drums.

After I adjusted the brakes by using this method on a number of Model A's, the consensus of the owners has been utter amazement. Comments like: "I never knew how good my brakes could be." to "I thought my brakes were good . . . now they are great."

